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GRAYMONT WESTERN CANADA INC.

2010 EXPLORATION AND FIELDWORK WITHIN THE BRAZEAU RANGE METALLIC AND INDUSTRIAL MINERALS PERMIT, WEST-CENTRAL ALBERTA

PART B

Metallic and Industrial Mineral Permit
9302090596

Geographic Coordinates

52°20' N to 52°30' N
115°44' W to 116°02' W

NTS Sheets 83 B/5, C/8

Owner and Operator:	MAIM Permit 9302090596 Graymont Western Canada Inc. 260, 4311 - 12 Street NE Calgary, Alberta T2E 4P9
Consultant:	Dahrouge Geological Consulting Ltd. 18, 10509 - 81 Avenue Edmonton, Alberta T6E 1X7
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Date Submitted:	November 2, 2010

Confidentiality Report End Date:
September 4, 2011

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PART C

1. SUMMARY

During August, 2010, the southern parts of Brazeau Range, south of Nordegg and within Metallic and Industrial Minerals (MAIM) Permit 9302090596, were explored for high-quality carbonate rocks. Exploration conducted in 2010 was a follow-up to previous exploration conducted along Brazeau Range during the summers of 2002-2004, and 2006-2007.

Access routes and outcrops were mapped, and a total of 116 rock samples were collected within the Brazeau Range Permit, representing approximately 330 m of stratigraphy. Samples were sent to a laboratory for whole-rock analysis.

Throughout this report attitudes of bedding and other planar features are given as A°/B° SW, where A° is the azimuth of the strike and B° is the amount of dip in the direction indicated (right-hand rule). A magnetic declination of 16°17' east was used. Where bedding was not evident, stratigraphic thicknesses were calculated using orientations from adjacent units. Where more than one bedding orientation was measured, the mean orientation is used.

2. INTRODUCTION

The 2010 exploration within the Brazeau Range Permit was conducted by Dahrouge Geological Consulting Ltd. (Dahrouge), on behalf of Graymont Western Canada Inc. (Graymont). This assessment report describes the exploration conducted within MAIM Permit 9302090596, which encompasses southern parts of Brazeau Range of the Alberta Foothills. Bob Robison, exploration manager for Graymont Western U.S. Inc., authorized this work.

The objectives of the 2010 exploration were to expand on the previously explored areas, and to locate and better define carbonate units throughout the property. This report includes information on the geology and quality of carbonates encountered while mapping and sampling outcrops within the permit area.

3. GEOGRAPHIC SETTING AND ACCESS

3.1 LOCATION AND ACCESS

MAIM Permit 9302090596 encompasses the southern part of Brazeau Range south of North Saskatchewan River and parts of the east side of Brazeau Range north of North Saskatchewan River, near Nordegg, Alberta (Fig.'s 1.1 and 1.2).

The southern portion of MAIM Permit 9302090596 is accessible via Highway 752, which branches southwest from Rocky Mountain House and North Fork Road 3 km west of Strachan, or

23 km east on a secondary road branching from Forestry Trunk Road about 28 km south of Highway 11. Access to and throughout the property is by all-terrain vehicle or helicopter, and extensive hiking.

Several creeks, mountains, and other features presently without names on published maps have been assigned informal names in this report to facilitate references to geographic locations.

3.2 INFRASTRUCTURE

Accommodations, food, fuel and other necessary services are available in Rocky Mountain House or Nordegg. The local economy is primarily based on agriculture, forestry, and energy-based industries.

Rocky Mountain House, with a population of about 7,000, is accessed by traveling 67 km west of Red Deer along the David Thompson Highway (Highway 11), and then 12 km north along Highway 22.

The Hamlet of Nordegg is about 85 km west of Rocky Mountain House, along Highway 11 (Fig. 1.2). Nordegg has a population of about 100.

3.3 TOPOGRAPHY, VEGETATION AND CLIMATE

The Brazeau Range Permit is included in the Eastern-Slope Montane Forest Ecological Region, and lies within the Rocky-Clearwater District of the Alberta Forest Reserve. In the subalpine zone, vegetation consists of stunted subalpine fir and Englemann Spruce, and alpine foliage above the treeline. Vegetation in areas of rugged limestone outcroppings is generally sparse, and commonly consists of junipers, other low brush, and grasses. Below the treeline, vegetation consists of dense stands of Aspen, Lodgepole Pine, White Spruce, and less frequent stands of Douglas Fir.

The property is comprised of northwest-trending ridges cut by northeast-trending valleys and drainages. Elevations range from approximately 1,160 m at 'The Gap' along North Saskatchewan River to about 2,130 m atop Spider Mountain. The property is cut by a number of drainages, including Dizzy Creek, Lundine Creek, Storm Creek, Trout Creek, and most notably, North Saskatchewan River, which cuts through the middle of the property.

Climate is sub-alpine with average summer temperatures of 20° to 25°C and winter temperatures of -15° to -20°C, with extremes of 35°C and -40°C. Rainfall averages about 40 cm per year; snowfall averages about 180 cm with the majority falling in December and January.

3.4 FIELD OPERATIONS

Field operations were conducted by a four-person geological crew from Dahrouge Geological Consulting Ltd., based in a hotel in Rocky Mountain House.

Transportation to and from the property was by four-wheel-drive truck. ATV's were utilized to explore access and outline carbonate outcrops within the property. In addition, a single day of helicopter was utilized to explore more remote portions of the property.

Garmin GPSmap 60Cx instruments were used to mark outcrop locations and record access information. Compasses were set at a magnetic declination of 16°17' east.

4. PROPERTY, EXPLORATION AND EXPENDITURES

4.1 PROPERTY SUMMARY

Graymont Western Canada Inc. acquired MAIM Permit 9302090596 (Brazeau Range) in 2002 to cover Paleozoic limestones along the eastern flank of Brazeau Range north of North Saskatchewan River and the southern part of Brazeau Range, south of North Saskatchewan River (Fig. 1.2). The Brazeau Range Permit encompasses 5,056 hectares and is contiguous to the Nordegg South MAIM Lease (9410010456).

Based on the 2010 exploration, the entirety of the Brazeau Range Permit will be retained (Section 4.3, Fig. 4.1).

4.2 2010 EXPLORATION SUMMARY

From August 4 to 19, 2010, Dahrouge Geological Consulting Ltd., on behalf of Graymont Western Canada Inc., conducted exploration for carbonate lithotypes within west-central Alberta. The work was undertaken to determine the location and extent of carbonate units in the permit area.

Carbonate outcrops were examined and a total of 116 samples were collected (Fig. 4.2). Geological observations were recorded, including lithologic information, measurements of structural elements, and other pertinent details (Appendix 2). A solution of 6% HCl was used to assess carbonate quality in the field, and rock samples were shipped to Central Lab of Graymont Western U.S. Inc. in Utah for analyses (Appendix 3). In some instances, interval thicknesses were determined by measuring outcrops perpendicular to bedding, where it could be identified. Field maps were completed on 1:20,000 and 1:30,000 scale map sheets and concentrated on areas along Brazeau Range south of North Saskatchewan River, and north of the river, along the eastern side of the range.

4.3 EXPLORATION EXPENDITURES

Expenditures for 2010 totaled $64,662.43 (Appendix 1). The entirety of the Brazeau Range Permit (MAIM Permit 9302090596) will be retained. Excess expenditures are to be assigned to a future exploration period of the Brazeau Range Permit. The current permit area includes:

Land Description (Mer-Rg-Tp)	Current Size (Ha)
5-13-39: 9L14, L15; 10NE, L11, L13, L14; 11L13-L16; 12L13, L14; 13W; 14-16; 17NE, L7, L8, L14; 19NE, L7, L8, L11, L13, L14; 20-22; 23S, NW, L9, L10, L15; 27SW; 28S, L10-L13; 29; 30; 31S; 32L1-L5; and **5-14-39:** 24L15, L16; 25N, SE, L6; 36NW, L1-L3, L8; and **5-14-40:** 1L4, L5, L12; 2L9, L16; 11L1, L2, L5-L7, L11-L13; 15NW, L1, L2, L6, L7; 16L16; 20L16; 21NW, SE, L3, L5, L6, L10; 22L4; 28L3-L5; 29; 30N, L1, L4-L8; 31SE, L3, L4, L9, L10; 32SW, L2.	5,056

Expenditures are allocated to MAIM Permit 9308050833 as follows:

Assessment Period MAIM Permit 9302090596	Expiry Date	Required Expenditures	Assigned Expenditures
Years 7 and 8	Sept. 04, 2010	$53,720.24	$53,720.24
Years 9 and 10	Sept. 04, 2012	$75,840	$10,942.19

5. REGIONAL GEOLOGY

In west-central Alberta, Paleozoic limestones are known to occur within the Middle Cambrian Eldon Formation, the Upper Devonian Mount Hawk Formation, the Upper Devonian Palliser Formation, the Upper Devonian to Lower Carboniferous Banff Assemblage and the Lower Carboniferous Rundle Assemblage (Table 5.1, Fig. 4.2).

Descriptions of the stratigraphy of the Mount Hawk, Palliser Formation, Banff Assemblage and Rundle Assemblage in Section 5.1 herein, are from a prior assessment report by Pana and Dahrouge (1998). A detailed review of the regional stratigraphy is provided by Stott and Aitken (1993), Mossop and Shetsen (1994), Halbertsma (1994), and Richards et al. (1994).

5.1 STRATIGRAPHY

5.1.1 Mount Hawk Formation

Along Front Ranges of the Rocky Mountains, the Upper Devonian Fairholme Group was transgressivelly deposited on eroded Upper Cambrian strata, and consists of two carbonate reef formations, the Cairn and the overlying Southesk formations (Table 5.1). Both are replaced basinward by the laterally equivalent argillaceous beds of the Flume, Maligne, Perdrix, and Mount Hawk formations (Mountjoy et al., 1992).

The Upper Devonian Southesk Formation at its type section on Mount Dalhousie, near the confluence of Southesk and Brazeau rivers, is 161 m thick and divided into the Peechee, Grotto, and Arcs members (MacKenzie, 1966; Mountjoy et al., 1992). To the west it thins into argillaceous dolomites and dolomitic shales of the Mount Hawk Formation. Where Highway 11 crosses Brazeau Range, the upper part of the Mount Hawk Formation, consists of cryptocrystalline, black, medium-bedded, argillaceous limestone (Douglas, 1956).

5.1.2 Palliser Formation

In west-central Alberta, the Upper Devonian Palliser Formation consists mainly of outer shelf and basinal carbonates of the Sassenach Basin (Halbertsma, 1994). The Palliser Formation is divisible into the Morro and overlying Costigan members, which are separated by an unconformity. The Morro Member comprises a lithologic suite dominated by carbonates with significant lateral facies variations. The Costigan Member consists of open-marine fossiliferous limestones and shales, with local evaporitic sedimentation. Within Foothills and Front Ranges of Alberta, limestones of the Palliser Formation vary from less than 180 m to more than 270 m in thickness (Holter, 1976).

The Palliser Formation is overlain by shales of the Exshaw Formation, and siliciclastics and carbonates of the Banff Assemblage.

5.1.3 Banff Assemblage

In west-central Alberta, the Exshaw, Banff and Yohin formations comprise the Banff Assemblage (Richards et al. 1994). The Upper Famennian to Lowermost Tournaisian Exshaw Formation is dominated by fine-grained siliciclastics deposited in euxinic basin to shallow-neritic environment. In general, it is unconformably overlain by the Lower to Upper Tournaisian Banff

Formation, which is a heterogeneous association of carbonates and fine-grained siliciclastics deposited on poorly differentiated carbonate platforms. Westward, the uppermost Banff Formation grades laterally into the Rundle Assemblage.

5.1.4 Rundle Assemblage

The Lower Carboniferous Rundle Assemblage extends from MacKenzie Mountains in the Arctic south through the Peace River Embayment to southeastern British Columbia. In west-central Alberta, it comprises shallow-marine platform and ramp carbonates which prograded westward over deeper water shales and carbonates of the Banff Assemblage. The lower Rundle Assemblage is subdivided into the transgressive carbonate Pekisko Formation, and two regressive successions of restricted-marine carbonates and subordinate anhydrite assigned to the Shunda and Turner Valley formations (Richards et al. 1994). In southern Alberta the Pekisko grades laterally into the uppermost Banff Formation. The Turner Valley Formation extends from east-central British Columbia to southwest Alberta. According to Richards et al. (1994), the Turner Valley Formation thickens to the southwest and for most of its length is 50 m to 120 m thick. The type section near Turner Valley is 152 m thick and divisible into four beds.

Earlier work by Douglas (1958), and MacQueen and Bamber (1968) indicate that the eastern peritidal sequences of the uppermost Pekisko, Shunda and lower Turner Valley grade south and southwestward into the more open-marine sequence of the Livingstone Formation (Table 5.1). The upper Rundle Assemblage includes the transgressive Mount Head Formation.

5.2 STRUCTURE

In Front Ranges and Foothills of west-central Alberta, Paleozoic and Mesozoic strata have been repeated along several major thrust faults. Displacements along these faults are interpreted to be tens of kilometres. Within individual thrust sheets, regional-scale folds exhibit a spatial relation to their leading edges. Near Nordegg, the main structural discontinuity is the northwest to southeast trending Brazeau Thrust. The leading edge of the thrust sheet is folded into the asymmetrical to recumbent Brazeau Anticline.

TABLE 5.1 GENERALIZED PALEOZOIC STRATIGRAPHY OF FOOTHILLS AND FRONT RANGES, WEST-CENTRAL ALBERTA*

System or Subsystem	Stratigraphic Unit		
	Assemblage / Group	Formation	
		S	N
Lower Carboniferous	Rundle Assemblage	Mount Head	
		[1] Livingstone	Turner Valley
			Shunda
			Pekisko
	Banff Assemblage	Banff	
		Exshaw	
		[1] Palliser	
		Alexo	
Upper Devonian	Fairholme Group°	Southesk	Mount Hawk
		Cairn	
Cambrian		Pika	
		Eldon	
		Stephen	
		Cathedral	

*Compiled from MacKenzie 1969, Richards et al. 1994, Switzer et al., 1994., and Holter, 1994.
° Fairholme Group of MacKenzie (1969) is partly equivalent to the Woodbend Group (Switzer et al., 1994).
[1] Current limestone production (*from* Holter, 1994)

6. RESULTS

Fifteen days were spent checking property access and outlining carbonate outcrops in detail. The 2010 exploration concentrated on defining stratigraphic unit locations and contacts within previously under-explored areas of the property.

Carbonate lithologies of the Palliser, Banff, Pekisko, Shunda, and Turner Valley formations were examined and sampled within Brazeau Range, north and south of North Saskatchewan River (Fig. 4.2). A total of 116 intervals were examined and sampled, representing more than 330 m of stratigraphy (Appendix 2). Where bedding could not be identified, stratigraphic measurements were taken based on the previously determined regional trend or deduced from surrounding measurements where possible.

Two outcrops of the Palliser Formation were examined in 2010, to test the potential for high-calcium limestone in the upper part of the unit and high-quality dolomite in the lower part of the unit (Fig. 4.2). Section 2010-02, located in Hidden Valley north of North Saskatchewan River, tested

the middle part of the formation and averaged 77.25% $CaCO_3$, 21.35% $MgCO_3$ and 0.69% SiO_2. Section 2010-03, located along a ridge north of the Brazeau Fire Tower, tested the upper part of the formation and averaged 83.02% $CaCO_3$, 12.68% $MgCO_3$ and 2.26% SiO_2 over 22 metres. The lower part of the formation generally consists of medium- to dark-grey, variably dolomitic mudstones. The upper part of the formation consists of weakly dolomitic, medium- to dark-brownish-grey lime mudstone to wackestone. The Palliser Formation continues to display a highly variable composition and further work is required before a conclusion can be made regarding it's potential for high-calcium limestone or high-quality dolomite.

Three intervals of Banff Formation were examined in 2010. Section 2010-11, located just south of North Saskatchewan River, averaged 89.75% $CaCO_3$, 7.04% $MgCO_3$ and 2.04% SiO_2 over 7.25 metres (Fig. 4.2). The Banff Formation consists of tan weathered, medium-brownish-grey fresh, micritic to fine-grained (with minor coarse-grained bioclasts) lime mudstone to wackestone. The Banff Formation is not considered a unit of interest due to it's low $CaCO_3$ values and high SiO_2 content.

The majority of the outcrops visited in 2010 were within the Pekisko Formation. Analytical results were variable, presumably due to the fact that different members within the formation were sampled. The best sample section was 2010-06, which averaged 98.48% $CaCO_3$, 0.79% $MgCO_3$ and 0.29% SiO_2 over approximately 15 m, and was collected from a resistant limestone cliff on the east side of Brazeau Range, above Gap Creek (Fig. 4.2). Several other sample sections and isolated intervals returned values in excess of 95% $CaCO_3$ over several metres, however $MgCO_3$, and less commonly SiO_2, impurities were common in many of the larger sections. The high-quality Pekisko intervals generally consist of resistant and massive, light- to medium-brownish-grey, fine- to coarse-grained crinoidal lime wackestone to grainstone. Lower quality intervals generally consist of less resistant, medium- to dark-brownish-grey, micritic to fine-grained lime mudstone to packstone. Overall the Pekisko Formation has the greatest high-calcium limestone potential.

A single outcrop of Shunda Formation was visited in 2010, located along the ridge to the northeast of Sheeptrap Mountain (Fig. 4.2). Section 2010-16 averaged 87.67% $CaCO_3$, 10.11% $MgCO_3$ and 1.22% SiO_2 over 12.5 m. It generally consists of recessive, rubbly, dark-brownish-grey lime mudstone and wackestone. The Shunda Formation is not considered to be a unit of interest in the area due to it's low $CaCO_3$ values.

Several outcrops of Turner Valley Formation were examined in 2010, to test for high-quality dolomite potential. The best dolomite interval was part of sample section 2010-14, located along a ridge south of Spider Mountain (Fig. 4.2). It averaged 42.81% $CaCO_3$ and less than 0.5% SiO_2

over approximately 9 metres. Other intervals of the Turner Valley Formation examined in 2010 were less dolomitic and/or returned elevated SiO_2 concentrations. It generally consists of vuggy, medium-brown to medium-grey, moderately to strongly dolomitic mudstone to wackestone. The Turner Valley Formation has the greatest potential for high-quality dolomite in the permit area, although more work is required to constrain it's extent and overall quality.

7. CONCLUSIONS

Carbonate units of the Palliser, Banff, Pekisko, Shunda and Turner Valley formations were examined and measured along Brazeau Range north and south of North Saskatchewan River. A total of 116 discrete intervals were sampled and described in detail. Based on the samples collected during the 2010 exploration and overall property assessment, the entirety of the permit will be retained.

Access roads and trails were noted, which provide limited access to the exterior of the property. Extensive hiking and/or helicopter are required to reach much of the property.

Future exploration will expand on previously conducted work in the area, confirming or redefining past geological interpretations and determining the potential for high-calcium limestone and/or high-quality dolomite within the permit area.

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9. STATEMENT OF QUALIFICATIONS

I, Patrick Kluczny, residing at 14815 - 39 Ave., Edmonton, Alberta, do hereby certify that:

- I am a geologist of Dahrouge Geological Consulting Ltd., Suite 18, 10509 - 81 Ave., Edmonton, Alberta, T6E 1X7.
- I am a 2006 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I have practiced my profession as a geologist continuously since 2006.
- I am a registered Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta, member M81985.
- I hereby consent to the copying or reproduction of this Assessment Report following the one-year confidentiality period.
- I am the author of the report entitled "2010 Exploration and Fieldwork within the Brazeau Range Metallic and Industrial Minerals Permit, West-Central Alberta" and accept responsibility for the veracity of technical data and results.

Dated this 2nd day of November, 2010.

Patrick Kluczny, B.Sc., P.Geol.

APEGGA M81985

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I, Patrick Kluczny, residing at 14815 - 39 Ave., Edmonton, Alberta, do hereby certify that:

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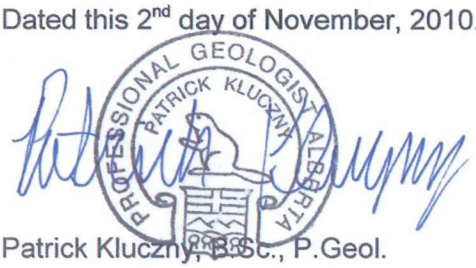


Patrick Kluczny, B.Sc., P.Geol.

APEGGA M81985

APPENDIX 1: COST STATEMENT FOR THE 2010 EXPLORATION AT THE BRAZEAU RANGE PERMIT

a) **Personnel**		$ 31,461.00
b) **Food and Accommodation**		$ 9,386.30
c) **Transportation**		$ 12,603.18
d) **Instrument Rental**		$ 512.38
e) **Drilling**	n/a	-
f) **Analyses**		$ 3,422.00
h) **Other** (Misc. Supplies, Software Rental, Field maps)		$ 1,399.17
Total		$ 58,784.03
Administration (10%)		$ 5,878.40
Total + Administration		$ 64,662.43

P. Kluczny, B.Sc., P.Geol.

Edmonton, Alberta
November 2, 2010

APPENDIX 2: 2010 SAMPLE DESCRIPTIONS AND ASSAY RESULTS FROM BRAZEAU RANGE

Notes: Stratigraphic thicknesses are based on measured attitudes of bedding listed below, with appropriate interpolations.
Attitudes are strike and dip (right-hand rule). Sections are listed in order from stratigraphic top to bottom.
Most samples consist of chips at 30 cm intervals. UTM coordinates are NAD83, Zone 11N. Section locations are shown in Figure 4.2.
Stratigraphy Abbreviations: TV - Turner Valley Formation, Sh - Shunda Formation, Pek - Pekisko Formation, B - Banff Formation, Pal - Palliser Formation

Sample	Strat. Unit	Strat. Thick. (m)	Description	$CaCO_3$ (%)	$MgCO_3$ (%)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SrO (ppm)	MnO (ppm)	P_2O_5 (ppm)
Section 2010-01: (583689 E, 5803167 N)											
74953	Pek	2	**Lime Packstone to Grainstone**, same as 74951, mostly dark-brown-grey fresh	98.18	0.90	0.68	0.083	0.048	291	16	<100
74952	Pek	3½	**Lime Packstone to Grainstone**, same as 74951, medium-brown-grey fresh, crinoid-rich grainstone more abundant, bedding 114°22° SW	96.77	2.59	0.33	0.036	0.058	304	22	106
-	Pek	½	**offset**	-	-	-	-	-	-	-	-
74951	Pek	1½	**Lime Wackestone to Packstone**, light-grey with minor tan weathered, medium- to dark-brown-grey fresh, cryptocrystalline to micritic, fine- to medium-grained bioclasts, thickly bedded (>2 m), crinoid ossicles, shell fragments; minor calcite veinlets, fetid odour, very good reaction with HCl	97.97	0.98	0.74	0.084	0.083	300	24	<100
Isolated Sample: (583850 E, 5803121 N)											
74954	Pek	2½	**Crinoidal Lime Packstone to Grainstone**, light- to medium-grey weathered, tan and medium-grey fresh, micritic to medium-grained (bioclasts), crinoid ossicles and stems, shell fragments, moderately-bedded (10 cm to 1 m), minor calcite veinlets, resistant, very good reaction with HCl, bedding 108°18° S	98.25	1.09	0.31	0.017	0.047	362	17	<100
Isolated Sample: (583528 E, 5803302 N)											
74955	Pek	4½	**Lime Wackestone to Packstone**, light-grey and tan weathered, medium- to dark-brown-grey fresh, mostly cryptocrystalline to micritic, fine- to medium-grained crinoid ossicles and shell fragments, massive and resistant, very minor black organic-filled vugs, fetid odour, very good reaction with HCl	97.08	1.49	0.74	0.056	0.079	297	27	103
Section 2010-02: (570769 E, 5812037 N)											
74959	Pal	3¼	**Slightly Dolomitic Mudstone to Dolomitic Lime Mudstone**, same as 74956, medium- to dark-grey fresh, brown mottling of lime mudstone, not as dolomitic overall, weak to good reaction with HCl	80.96	17.59	0.76	0.200	0.109	194	35	<100
-	Pal	½	**offset**	-	-	-	-	-	-	-	-
74958	Pal	2¾	**Calcareous Dolomitic Mudstone to Dolomitic Lime Mudstone**, same as 74956, minor medium- to dark-grey fresh, less dolomitic	83.21	15.25	0.72	0.184	0.146	216	44	<100
74957	Pal	2¾	**Dolomitic Mudstone to Dolomitic Lime Mudstone**, same as 74956, minor medium-grey fresh, more calcareous, very weak to good reaction with HCl, bedding 145°38° SW	76.98	21.40	0.62	0.168	0.104	170	32	<100

74956	Pal	3¼	**Calcareous Dolomitic Mudstone**, light- to medium-grey weathered, medium-brown-grey fresh, very-fine-grained (silty in places), massive and resistant, rough pockety weathering surfaces, very minor calcite veinlets and fracture smear, indescript, very weak reaction with HCl, bedding dips 25°SW	68.71	30.21	0.65	0.176	0.131	120	38	<100

Isolated Sample: (571158 E, 5813195 N)

74960	TV	1½	**Dolomitic Mudstone**, tan and medium-dark-grey weathered, very-light-tan-grey fresh, cryptocrystalline to very-fine-grained, quite hard and resistant, black bands and spots (carbonaceous material), locally weakly vuggy, fetid odour, absent to very-weak reaction with HCl	61.43	37.17	0.76	0.108	0.110	98	228	155

Isolated Sample: (571025 E, 5813224 N)

74961	Pek	grab	**Lime Wackestone to Packstone**, light- to medium-grey weathered, dark-brown-grey fresh, cryptocrystalline to medium-grained, resistant and hard, crinoid ossicles and shell fragments, weak calcite veining, fetid odour, very good reaction with HCl	97.43	1.46	0.33	0.025	0.078	395	28	<100

Section 2010-03: (582414 E, 5802026 N)

74966	Pal	3	**Lime Mudstone to Wackestone**, same as 74965, minor dark brown-grey fresh, locally more fossiliferous (wackestone)	91.88	6.63	0.92	0.131	0.160	315	171	<100
74965	Pal	2¾	**Lime Mudstone to Wackestone**, light-grey weathered, light- to medium-brown-grey fresh, micritic to very-fine-grained, rare crinoid ossicles, shell fragments, massive and resistant, very minor calcite veinlets, locally conchoidal fracturing, very good reaction with HCl	97.22	1.07	0.74	0.127	0.095	279	68	<100
74964	Pal	1¾	**Slightly Dolomitic Lime Mudstone to Wackestone**, tan and light-grey weathered, medium- to dark-brown-grey fresh, micritic to very-fine-grained, rare large (up to 0.5 cm) brachiopod shells, minor iron concretions, minor calcite veinlets, moderate to well-bedded (locally laminated), weakly dolomitic, good reaction with HCl	79.69	15.38	2.69	0.506	0.286	352	173	<100
74963	Pal	4¼	**Lime Mudstone to Wackestone**, light-grey weathered, dark-brown to grey fresh, micritic to very-fine-grained, massive and resistant, rusty fracturing, rubbly, minor calcite veining, minor silty dolomite near base, rare crinoid ossicles and shell fragments, good to very-good reaction with HCl, bedding 356?08°E	89.81	7.66	1.57	0.274	0.206	346	75	<100
74962	Pal	3	**Calcareous Dolomitic Mudstone**, tan and light-grey weathered, medium-brown-grey fresh, very-fine-grained, well-bedded and laminated, rubbly, rusty in places, minor calcite veining (fractures), indescript, absent HCl reaction (powder fizzes), wavy bedding 352?08°E	52.90	34.52	5.97	1.045	0.448	166	118	150

Section 2010-04: (570155 E, 5814283 N)

75002	Pek	2	**Crinoidal Lime Packstone to Grainstone**, same as 74975, minor medium-brown-grey fresh, wavy bedding 076?21°S	95.08	4.00	0.54	0.018	0.117	447	34	<100
-	Pek	½	**offset**	-	-	-	-	-	-	-	-
75001	Pek	2¾	**Crinoidal Lime Packstone to Grainstone**, same as 74975, bedding 088?20°S and 075?20°S	96.52	2.38	0.63	0.020	0.082	463	27	<100

74975	Pek	3	**Crinoidal Lime Packstone to Grainstone**, light-grey weathered, medium-grey fresh, fine- to medium-grained, fossiliferous, resistant, thick-bedded (>1 m), crinoid ossicles and stems, shell fragments; minor calcite veining, moderately fractured, very good reaction with HCl	97.70	1.49	0.42	0.025	0.067	322	28	<100
74974	Pek	2¾	**Slightly Dolomitic Lime Wackestone to Grainstone**, same as 74969, mostly light- to medium-grey fresh, locally fossiliferous, crinoid ossicles, shell fragments; good to very good reaction with HCl	81.32	17.28	0.91	0.064	0.085	275	39	<100
74973	Pek	3	**Dolomitic Lime Packstone**, same as 74969, more fossiliferous, crinoid ossicles and stems, locally rusty weathering, weak reaction with HCl	70.80	26.86	1.60	0.167	0.157	224	46	117
74972	Pek	2¼	**Dolomitic Lime Wackestone to Packstone**, same as 74969, locally fossiliferous grainstone, crinoid ossicles, rugose and colonial corals; local chert nodules and lenses, somewhat more resistant and thick-bedded, weakly dolomitic, weak reaction with HCl, bedding 066°26° SE	72.61	23.24	3.01	0.247	0.101	254	43	121
74971	Pek	2¼	**Calcareous Dolomitic Wackestone to Packstone**, same as 74969, mostly light-grey fresh, locally abundant chert nodules, fossiliferous bed with rugose corals, rusty weathering along fractures, good reaction with HCl, slightly wavy bedding 065°18° S	63.68	30.82	4.02	0.472	0.145	226	49	173
74970	Pek	3	**Calcareous Dolomitic Wackestone to Packstone**, same as 74969, mostly light-brown-grey fresh, dolomitic, weak reaction with HCl	62.29	33.58	3.11	0.372	0.141	205	49	260
74969	Pek	3½	**Calcareous Dolomitic Wackestone**, tan and light-brown-grey weathered, light-grey to light-brown-grey fresh, very-fine- to medium-grained, locally fossiliferous (up to grainstone), abundant crinoid ossicles and stems, shell fragments, rare rugose corals; moderate to well-bedded, dolomitic and weakly siliceous, very rubbly, slightly recessive, abundant calcite smear along fractures, weak to moderate reaction with HCl	63.91	32.82	2.22	0.294	0.158	210	73	187
74968	Pek	2	**Dolomitic Lime Packstone to Grainstone**, same as 74967, minor light-brown-grey weathered, good reaction with HCl	71.43	27.20	0.72	0.102	0.153	149	91	185
74967	Pek	3½	**Crinoidal Lime Packstone to Grainstone**, light-grey weathered, light-brown-grey fresh, fine- to coarse-grained, fossiliferous, abundant crinoid ossicles and stems, shell fragments; massive and resistant, moderately fractured, calcite smear along fractures, very good reaction with HCl, wavy bedding 076°20° S and 070°20° S	95.59	3.58	0.31	0.027	0.137	258	54	176
Section 2010-05: (570147 E, 5814294 N)												
74977	Pek	1½	**Lime Wackestone**, same as 74976, fewer crinoids, minor light-tan banding, recrystallized near base, rubbly, massive	98.15	1.00	0.37	0.021	0.042	308	26	276
74976	Pek	2	**Crinoidal Lime Packstone**, dark-grey weathered, medium-tan-grey fresh, very-fine-grained, abundant crinoids and shell fragments; minor vugs, rubbly, fetid odour, very good reaction with HCl	98.20	1.09	0.26	0.020	0.051	337	30	187
Section 2010-06: (576668 E, 5803655 N)												
74988	Pek	2	**Crinoidal Lime Packstone to Grainstone**, same as 74987, massive	98.41	0.77	0.62	0.011	0.045	501	23	<100
74987	Pek	½	**Crinoidal Lime Packstone to Grainstone**, same as 74986, massive, bedding 135°42° SE	97.82	0.79	0.69	0.012	0.081	447	28	<100
-	Pek	½	**offset**	-	-	-	-	-	-	-	-

74986	Pek	½	**Crinoidal Lime Packstone to Grainstone**, light-grey weathered, medium-tan-grey fresh, very-fine-grained, abundant crinoid ossicles and shell fragments, massive, very good reaction with HCl	98.61	0.79	0.20	0.012	0.070	311	28	<100
74985	Pek	1½	**Crinoidal Lime Wackestone to Packstone**, same as 74980, very-fine-grained to cryptocrystalline, no calcite veinlets, massive	98.63	0.77	0.44	0.018	0.083	313	32	<100
74984	Pek	1	**Crinoidal Lime Wackestone to Packstone**, same as 74980, very-fine-grained to cryptocrystalline, massive	98.61	0.82	0.13	0.014	0.055	314	22	<100
74983	Pek	1¼	**Crinoidal Lime Wackestone to Packstone**, same as 74980, massive	98.31	0.82	0.19	0.018	0.065	316	24	<100
74982	Pek	½	**Crinoidal Lime Wackestone to Packstone**, same as 74980, massive	98.65	0.82	0.18	0.016	0.073	302	26	<100
74981	Pek	2	**Crinoidal Lime Wackestone to Packstone**, same as 74980, very-fine-grained to cryptocrystalline, massive	98.93	0.75	0.14	0.013	0.044	292	19	<100
74980	Pek	1¾	**Crinoidal Lime Wackestone to Packstone**, light-grey weathered, medium-tan-grey fresh, cryptocrystalline to medium-grained, crinoid ossicles abundant (some very large), minor shell fragments, very minor calcite veinlets, massive, very good reaction with HCl	98.40	0.77	0.08	0.015	0.060	292	26	<100
74979	Pek	2	**Crinoidal Lime Packstone to Grainstone**, same as 74978, minor cryptocrystalline, fewer crinoids, massive	98.18	0.82	0.25	0.064	0.112	328	59	<100
74978	Pek	2½	**Crinoidal Lime Packstone to Grainstone**, light-grey weathered, medium-tan-grey fresh, very-fine-grained, abundant crinoid ossicles and shell fragments; massive, very good reaction with HCl	98.91	0.79	0.11	0.015	0.061	320	24	<100

Section 2010-07: (584680 E, 5800715 N)

74995	Pek	2½	**Lime Mudstone to Wackestone**, light-grey weathered, medium-brown-grey fresh, cryptocrystalline to fine-grained, minor crinoid ossicles, well-bedded, resistant, very good reaction with HCl, bedding 040°/12° SE	90.92	8.03	0.64	0.029	0.088	395	28	<100
74994	Pek	3	**Crinoidal Lime Packstone**, same as 74992, fewer fossils, well-bedded	95.13	4.02	0.62	0.027	0.078	438	24	<100
-	Pek	½	**offset**	-	-	-	-	-	-	-	-
74993	Pek	3	**Crinoidal Lime Packstone**, same as 74992, fewer fossils, resistant, well-bedded, bedding 038°/10° SE and 042°/03° SE	97.74	1.03	0.74	0.017	0.067	469	22	<100
74992	Pek	3	**Crinoidal Lime Packstone to Grainstone**, light-grey weathered, medium- to dark-grey-tan fresh, fine-grained, abundant crinoid ossicles and shell fragments, minor calcite nodules (~3 cm), resistant, well-bedded, very good reaction with HCl	94.20	4.71	0.78	0.027	0.082	462	27	<100
-	Pek	1½	**offset**	-	-	-	-	-	-	-	-
74991	Pek	3	**Crinoidal Lime Wackestone to Packstone**, light-grey weathered, medium-grey-tan fresh, fine-grained, abundant crinoid ossicles and shell fragments, well-bedded, rubbly, moderate reaction with HCl	86.87	10.15	2.43	0.100	0.122	509	34	101
-	Pek	7	**offset**	-	-	-	-	-	-	-	-
74990	Pek	2¾	**Crinoidal Lime Grainstone**, same as 74889, very minor cryptocrystalline, rubbly	90.86	7.95	0.82	0.047	0.091	315	41	121
74989	Pek	3	**Crinoidal Lime Grainstone**, light-grey weathered, light- to medium-tan-grey fresh, fine- to medium-grained, abundant crinoid ossicles and shell fragments, rare crinoid stems; well-bedded, resistant, very good reaction with HCl	96.75	2.05	0.62	0.036	0.109	368	38	<100

Section 2010-08: (584827 E, 5800862 N)

75052	Pek	2½	**Crinoidal Lime Packstone to Grainstone**, same as 75051, more abundant crinoids, well-bedded, resistant	96.17	2.62	0.34	0.017	0.068	311	22	<100
75051	Pek	3	**Crinoidal Lime Packstone**, light-grey weathered, medium-tan-grey fresh, cryptocrystalline to fine-grained, abundant crinoid ossicles and stems, shell fragments; well-bedded	96.99	2.05	0.36	0.018	0.021	320	17	<100
-	Pek	2¼	**offset**	-	-	-	-	-	-	-	-
75000	Pek	4	**Slightly Dolomitic Lime Wackestone to Packstone**, same as 74999, somewhat recessive, rubbly benches, very good reaction with HCl, wavy bedding 044°08° SE	81.33	16.21	1.88	0.150	0.154	412	39	123
74999	Pek	4	**Slightly Dolomitic Lime Wackestone to Packstone**, light-grey weathered, medium-tan-grey fresh, cryptocrystalline to fine-grained, crinoids and shell fragments, rubbly, good reaction with HCl	78.89	18.72	1.70	0.218	0.145	301	45	126
74998	Pek	3	**Crinoidal Lime Grainstone**, same as 74996, cryptocrystalline to fine-grained, moderately-bedded (~30 cm), bedding 044°22° SE	86.87	11.99	0.78	0.039	0.189	337	57	<100
74997	Pek	3½	**Crinoidal Lime Grainstone**, same as 74996, massive, resistant	98.29	1.11	0.47	0.027	0.059	376	30	104
74996	Pek	3	**Crinoidal Lime Grainstone**, light-grey weathered, medium-tan-grey fresh, fine- to medium-grained, abundant crinoid ossicles, stems, shell fragments, rare rugose corals; massive, very good reaction with HCl, beds dip about 10° SE	98.18	0.88	0.58	0.040	0.076	423	36	<100

Section 2010-09: (584128 E, 5800405 N)

75009	Pek	4	**Crinoidal Lime Packstone**, same as 75008, very good reaction with HCl, wavy bedding 040°26° SE	93.18	5.86	0.58	0.026	0.097	420	35	<100
-	Pek	2¼	**offset**	-	-	-	-	-	-	-	-
75008	Pek	2¼	**Crinoidal Lime Packstone**, light-grey weathered, light- to medium-brown-grey fresh, very-fine- to fine-grained, crinoid ossicles, shell fragments; resistant and thick-bedded, very weak calcite veining, very good reaction with HCl	97.52	1.80	0.43	0.017	0.057	438	23	<100
75007	Pek	3½	**Lime Wackestone to Packstone**, same as 75005, more resistant and thick-bedded, moderate reaction with HCl, bedding 091°36° S	91.88	6.90	0.82	0.070	0.080	441	31	<100
75006	Pek	3½	**Dolomitic Lime Wackestone to Packstone**, same as 75005, more packstone (fossiliferous), medium-brown-grey fresh, minor localized colonial coral, locally chert nodules, weak reaction with HCl	74.59	21.82	2.74	0.241	0.160	362	43	<100
75005	Pek	3¼	**Slightly Dolomitic Lime Wackestone to Packstone**, tan and light-grey weathered, medium- to dark-brown-grey fresh, very-fine- to medium-grained, crinoid ossicles, shell fragments, rare rugose corals; slightly dolomitic, moderately-bedded and slightly recessive, rubbly, locally fossiliferous grainstone, very good reaction with HCl	79.73	17.97	1.64	0.184	0.133	389	46	164
75004	Pek	3¼	**Slightly Dolomitic Lime Grainstone**, same as 75003, rare rugose corals, very good reaction with HCl	87.60	11.51	0.65	0.050	0.095	349	45	<100
75003	Pek	3	**Crinoidal Lime Grainstone**, light-grey weathered, light-brown-grey fresh, fine- to coarse-grained, resistant and thick-bedded (>1 m), fossiliferous, crinoid ossicles and stems, shell fragments; moderately fractured, very minor calcite veining, very good reaction with HCl, wavy bedding 070°19° S	97.95	1.17	0.49	0.020	0.088	410	39	<100

Section 2010-10: (584198 E, 5800206 N)

75011	TV	2½	**Lime Mudstone**, same as 75010, very good reaction with HCl, wavy bedding 078°/22° S	89.60	8.47	1.05	0.125	0.167	344	73	<100
75010	TV	3	**Lime Mudstone**, light-brown-grey weathered, dark- to very-dark grey fresh, micritic to very-fine-grained, moderately-bedded (10-40 cm), rubbly, locally vuggy (calcite and organic matter-filled), locally weakly dolomitic, fetid odour, good reaction with HCl	96.68	1.49	0.89	0.146	0.154	438	55	<100

Isolated Sample: (574697 E, 5805084 N)

75012	?	grab	**Lime Mudstone**, dark-brown-grey weathered, dark- to very-dark-grey fresh (minor brown mottles), micritic to very-fine-grained, resistant and very hard, moderately-bedded (20-50 cm), minor calcite veinlets, fetid odour, moderate to good reaction with HCl, wavy bedding 153°/30° SW	89.36	1.46	5.53	0.328	0.251	479	387	14220

Section 2010-11: (575248 E, 5805443 N)

75014	B	4¼	**Lime Mudstone to Wackestone**, same as 75013, very minor dark-brown-grey fresh	92.04	4.31	2.10	0.478	0.237	477	223	190
-	B	2¾	**offset**	-	-	-	-	-	-	-	-
75013	B	3	**Slightly Dolomitic Lime Mudstone to Wackestone**, tan and medium-grey weathered, light- to medium-brown and brown-grey fresh, micritic to very-fine-grained, moderate to thick-bedded (10 cm to 1 m), quite resistant, minor shell fragments, laminated in places, minor calcite veinlets, good reaction with HCl, bedding 136°/47° SW	86.49	10.90	1.96	0.160	0.143	368	215	122

Isolated Sample: (575188 E, 5805303 N)

75015	Pek	2¾	**Lime Wackestone**, light-brown-grey weathered, very-dark-brown-grey fresh, micritic to very-fine-grained, somewhat resistant, moderately-bedded (20 cm to 1 m), very minor calcite veinlets, fetid odour, good to very good reaction with HCl	72.86	4.48	11.57	1.756	0.707	595	214	853

Isolated Sample: (575266 E, 5805284 N)

75016	Pek	2	**Crinoidal Lime Packstone to Grainstone**, light- to medium-grey weathered, medium- to dark-brown-grey fresh, very-fine- to coarse-grained (crinoid ossicles), resistant, thick-bedded (>50 cm), abundant crinoid ossicles and stems, shell fragments, crinoid ossicles up to 5 mm; fetid odour, very good reaction with HCl, beds dipping 30-40° SSW	88.26	4.64	6.06	0.337	0.231	1127	175	200

Section 2010-12: (584845 E, 5800515 N)

75024	Pek	2	**Slightly Dolomitic Lime Wackestone to Packstone**, same as 75023	86.30	11.80	1.15	0.085	0.369	378	94	<100
75023	Pek	2½	**Slightly Dolomitic Lime Wackestone to Packstone**, light-grey weathered, light- to medium-grey fresh, micritic to medium-grained, crinoid ossicles and stems, shell fragments; moderately-bedded (10-50 cm), resistant and hard, moderately-fractured, very good reaction with HCl	86.65	12.20	0.79	0.022	0.108	363	42	<100
75022	Pek	3	**Crinoidal Lime Packstone**, same as 75021, not as well-bedded, very good reaction with HCl	97.70	1.09	0.46	0.013	0.111	430	37	<100
-	Pek	2½	**offset**	-	-	-	-	-	-	-	-

75021	Pek	2½	**Crinoidal Lime Packstone**, light-grey with minor brown weathered, light- to medium-brown-grey fresh (minor tan), very-fine- to medium-grained, crinoid ossicles, shell fragments; moderately-bedded (10-40 cm), less resistant and breaks easily, moderately fractured, very good reaction with HCl, slightly wavy bedding 063°/37° SE	97.34	1.38	0.55	0.021	0.159	432	47	142
75020	Pek	3	**Crinoidal Lime Packstone to Grainstone**, same as 75018	98.13	0.98	0.57	0.016	0.090	442	34	<100
75019	Pek	2¾	**Crinoidal Lime Packstone to Grainstone**, same as 75018, more medium-grained grainstone, some light-brown-grey fresh	95.47	3.33	0.60	0.032	0.061	471	25	<100
-	Pek	¾	**offset**	-	-	-	-	-	-	-	-
75018	Pek	2	**Slightly Dolomitic Lime Packstone to Grainstone**, light-grey weathered, medium-brown-grey fresh, very-fine- to medium-grained, crinoid ossicles and stems, shell fragments, ooids (?); thick-bedded (>1 m), resistant and hard, weak fetid odour, very good reaction with HCl, wavy bedding 078°/18° S	88.67	10.17	0.68	0.047	0.118	417	44	<100
-	B	1¾	**offset**	-	-	-	-	-	-	-	-
75017	B	2½	**Slightly Dolomitic Lime Wackestone to Packstone**, tan and light-grey weathered, medium-brown-grey fresh, micritic to coarse-grained (bioclasts), crinoid ossicles, brachiopod shells, rugose corals; moderately-bedded (20-50 cm), somewhat resistant and hard, locally quite grainy, moderate to very good reaction with HCl, beds dip 30° to SE	84.83	11.76	2.99	0.094	0.106	427	40	<100
Section 2010-13: (584944 E, 5800640 N)											
75033	Pek	2½	**Crinoidal Lime Packstone**, same as 75030, very minor vugs with carbonaceous material, rubbly, bedding 040°/15° SE	91.83	6.76	0.71	0.031	0.144	393	46	<100
75032	Pek	2	**Crinoidal Lime Packstone to Grainstone**, same as 75030, locally more bioclasts, rare carbonaceous material in vugs or replacing bioclasts, fetid odour, locally vuggy, very good reaction with HCl	93.52	5.31	0.48	0.016	0.104	404	37	100
-	Pek	1½	**offset**	-	-	-	-	-	-	-	-
75031	Pek	2¼	**Crinoidal Lime Packstone**, same as 75030, very good reaction with HCl, bedding 049°/20° SE	97.86	1.03	0.48	0.018	0.098	458	32	<100
75030	Pek	3	**Crinoidal Lime Packstone**, light-grey weathered, medium-brown-grey fresh, very-fine- to medium-grained, crinoid ossicles, shell fragments; moderate to thick-bedded (30 cm to 1 m), resistant and hard, moderately fractured and rubbly, very good reaction with HCl, wavy bedding 052°/25° SE	97.65	1.30	0.50	0.015	0.046	449	22	<100
-	Pek	½	**offset**	-	-	-	-	-	-	-	-
75029	Pek	2½	**Slightly Dolomitic Lime Wackestone to Packstone**, same as 75027, locally mud-rich, not as much dolomite mottling, rubbly, bedding 054°/36° SE	77.89	17.95	3.30	0.157	0.093	384	38	137
-	Pek	½	**offset**	-	-	-	-	-	-	-	-
75028	Pek	3½	**Slightly Dolomitic Lime Wackestone to Packstone**, same as 75027, less fossiliferous, much less dolomite mottling, rubbly	77.92	19.04	2.01	0.244	0.175	361	48	119

75027	Pek	2	**Dolomitic Lime Packstone to Grainstone**, light-grey to light-brown weathered, medium-grey to medium-brown fresh, locally strong dolomite mottling (brown), micritic to coarse-grained (bioclasts), moderate to well-bedded (5-25 cm), crinoid ossicles and stems, shell fragments, colonial corals, rare brachiopod shell and rugose corals; minor calcite vugs and nodules, rubbly and hard, less resistant, weak to very good reaction with HCl	73.75	24.46	1.24	0.135	0.138	263	60	132
-	Pek	½	**offset**	-	-	-	-	-	-	-	-
75026	Pek	2½	**Crinoidal Lime Packstone to Grainstone**, tan and light-grey weathered, light- to medium-brown-grey fresh, locally quite brown weathered and fresh, very-fine- to coarse grained (bioclasts), abundant crinoid ossicles and stems, shell fragments, rugose corals; moderately-bedded (20 cm to 1 m), less resistant, somewhat rubbly, good to very good reaction with HCl, wavy bedding 056°/34° SE	97.15	2.01	0.50	0.028	0.100	400	37	112
75025	Pek	3½	**Crinoidal Lime Grainstone**, light-brown-grey weathered and fresh, very-fine- to medium-grained, minor coarse-grained crinoid ossicles and stems, shell fragments; resistant and massive, powders when struck, weak fetid odour, very good reaction with HCl	96.90	1.84	0.46	0.035	0.174	360	57	<100
Section 2010-14: (581816 E, 5800562 N)												
75046	TV	3	**Dolomitic Mudstone**, tan to light-grey weathered, light-brown-grey fresh, cryptocrystalline to very-fine-grained, locally very vuggy (filled with carbonaceous material), moderate to thick-bedded (20-75 cm), more resistant, still rubbly, minor calcite veining and vug fill, very weak reaction with HCl (powder fizzes), wavy bedding 108°/22° S	55.49	41.53	0.83	0.136	0.181	98	289	<100
75045	TV	2½	**Dolomitic Mudstone**, tan-grey weathered, local rusty weathering, light-brown-grey to medium-grey fresh, cryptocrystalline to very-fine-grained (silty in places), locally vuggy, well-bedded (<20 cm), rubbly, somewhat recessive, mudstone is rarely laminated, very weak to absent reaction with HCl	53.65	38.72	4.44	0.599	0.317	98	351	123
75044	TV	1	**Siliceous Mudstone**, tan and light-grey weathered, tan and light- to dark-grey fresh, cryptocrystalline to very-fine-grained, often laminated (irregular and wavy), abundant chert nodules and lenses, locally dolomitic (silty), well-bedded (<20 cm), quite recessive, rubbly, no reaction with HCl, bedding 114°/26° SE	31.63	20.88	43.88	0.181	0.159	59	117	<100
75043	TV	2½	**Dolomitic Mudstone**, same as 75040, mostly silty and very-fine-grained, less fossiliferous, rubbly, slightly recessive	50.81	39.56	5.11	0.847	0.367	75	199	182
75042	TV	3	**Dolomitic Mudstone to Wackestone**, same as 75040, minor packstone intervals, very weak reaction with HCl	55.44	42.26	0.66	0.095	0.133	81	123	<100
75041	TV	4	**Dolomitic Mudstone to Wackestone**, same as 75040, quite resistant and massive, bedding 118°/23° SW	55.81	43.05	0.33	0.046	0.065	77	70	<100
75040	TV	2¾	**Dolomitic Mudstone to Wackestone**, tan and light-grey weathered, light-brown-grey fresh, micritic to fine-grained, rare shell fragments, colonial corals; vuggy (open), localized chert nodules, moderately-bedded (10-50 cm), less resistant, rubbly, very weak reaction with HCl, bedding 126°/22° SW	54.70	43.07	0.43	0.068	0.069	55	56	176
75039	TV	2	**Slightly Dolomitic Lime Wackestone to Packstone**, same as 75038, dolomitic near top, very good reaction with HCl	78.66	17.97	2.07	0.432	0.163	162	56	129

75038	TV	3¼	**Lime Wackestone to Packstone**, light-grey weathered, light-brown-grey to light-grey fresh, micritic to very-fine-grained, very minor coarse-grained bioclasts, crinoid ossicles, shell fragments, rare rugose corals; moderate to thick-bedded (20 cm to 1 m), moderately-fractured, minor calcite veining, very good reaction with HCl	90.03	8.45	0.79	0.046	0.100	284	48	<100
75037	TV	3	**Lime Wackestone to Grainstone**, same as 75036, locally mud-rich (wackestone), overall less vuggy, minor medium-brown-grey fresh, good reaction with HCl	93.84	5.08	0.72	0.036	0.095	253	52	<100
75036	TV	3	**Lime Grainstone**, light-grey weathered, medium-brown fresh, fine- to medium-grained, minor coarse-grained bioclasts, crinoid ossicles, shell fragments, rugose corals, brachiopods; thick-bedded (>1 m), somewhat vuggy, minor carbonaceous material, resistant but powders when struck, moderately-fractured, very good reaction with HCl	94.20	4.10	0.96	0.060	0.118	290	65	<100
75035	TV	2½	**Dolomitic Lime Mudstone**, tan to light-grey weathered, medium-brown-grey fresh, micritic to very-fine-grained, moderately-bedded (10-50 cm), moderate calcite veining, dolomite appears secondary, limestone is vuggy, somewhat recessive, very weak to good reaction with HCl	67.25	25.46	4.97	0.934	0.412	317	98	168
75034	TV	3	**Lime Mudstone**, tan and light-grey weathered, light- to medium-brown-grey fresh, micritic to very-fine-grained, moderately-bedded (20 cm to 1 m), vuggy (rusty or carbonaceous material-filled), rusty weathering along fractures and vugs, moderate calcite veining (locally strong), rubbly, somewhat recessive, good to very good reaction with HCl, bedding 108°/26° S	82.15	14.90	1.78	0.313	0.211	326	74	142
Section 2010-15: (578764 E, 5804899 N)												
75066	Pek	4	**Crinoidal Lime Packstone**, same as 75065, mostly light-brown-grey fresh, very good reaction with HCl	98.18	0.92	0.28	0.014	0.061	348	22	<100
75065	Pek	3	**Crinoidal Lime Wackestone to Grainstone**, light-grey weathered, light- to medium-brown-grey fresh, micritic to medium-grained (minor coarse-grained bioclasts), crinoid ossicles and stems, shell fragments, ooids (?); rubbly, thick-bedded (>1 m), resistant, moderate to strongly-fractured, weak fetid odour, very good reaction with HCl	94.70	4.08	0.41	0.036	0.119	318	34	<100
75064	Pek	3	**Lime Wackestone**, same as 75057, mostly medium- to dark-brown-grey fresh, less fossiliferous	94.51	3.70	0.88	0.064	0.123	305	29	<100
75063	Pek	3	**Lime Wackestone to Packstone**, same as 75057, minor dark-brown-grey fresh	94.04	4.33	0.90	0.072	0.115	269	28	<100
75062	Pek	3	**Lime Wackestone to Packstone**, same as 75057, minor light-grey packstone near top, very good reaction with HCl, fault plane 122°/ 75° SW	87.74	10.54	1.13	0.119	0.127	311	34	<100
75061	Pek	3	**Lime Wackestone**, same as 75057, less fossiliferous, mostly medium-brown-grey fresh, very good reaction with HCl	92.02	6.38	0.67	0.058	0.079	300	32	<100
75060	Pek	2¾	**Lime Wackestone to Packstone**, same as 75057, some dark-brown-grey fresh, overall less fossiliferous (wackestone), very good reaction with HCL	97.95	1.13	0.27	0.025	0.064	333	27	<100
75059	Pek	2¾	**Crinoidal Lime Wackestone to Packstone**, same as 75057, mostly medium-brown-grey, very good reaction with HCl	98.31	0.98	0.31	0.018	0.046	363	22	<100
75058	Pek	2¾	**Crinoidal Lime Packstone to Grainstone**, same as 75057, more fossiliferous, coarse-grained grainstone in places, very good reaction with HCl	98.16	0.79	0.13	0.011	0.035	331	17	<100

75057	Pek	3¼	**Crinoidal Lime Wackestone to Packstone**, light-grey to tan weathered, light- to medium-brown-grey fresh, micritic to medium-grained (minor coarse-grained bioclasts), crinoid ossicles, shell fragments, appears moderately bedded but no reliable surfaces, very resistant, moderate to strongly fractured, moderate calcite veining, very good reaction with HCl	98.52	0.94	0.30	0.012	0.129	341	34	<100
75050	Pek	3½	**Crinoidal Lime Packstone to Grainstone**, same as 75047, more fossiliferous (grainstone), closely spaced joints 258°/45° N	98.27	0.90	0.13	0.017	0.027	322	19	<100
75049	Pek	2	**Crinoidal Lime Packstone to Grainstone**, same as 75047, more grainstone, fossiliferous, very good reaction with HCl	98.27	0.84	0.19	0.027	0.043	307	22	<100
75048	Pek	3½	**Crinoidal Lime Packstone**, same as 75047, minor wackestone, very good reaction with HCl	91.22	7.03	0.76	0.075	0.101	294	70	<100
75047	Pek	3½	**Crinoidal Lime Packstone**, light-grey weathered, light- to medium-brown-grey fresh, micritic to medium-grained, crinoid ossicles and stems, shell fragments; massive and resistant, moderate to strongly fractured, moderate to strong calcite veining, minor brecciation by calcite veining, very good reaction with HCl, bedding 142°/36° SW	97.65	1.74	0.16	0.013	0.064	394	33	<100
Section 2010-16: (585127 E, 5800985 N)											
75056	Sh	4	**Slightly Dolomitic Lime Wackestone to Packstone**, light-grey weathered, medium tan-grey fresh, fine-grained, crinoid ossicles, rubbly, very good reaction with HCl	83.58	15.17	0.72	0.072	0.121	126	53	<100
75055	Sh	2¾	**Lime Mudstone to Wackestone**, same as 75053, some dark-brown fresh, rare shell fragments, rubbly	93.72	5.15	0.53	0.041	0.057	169	37	<100
75054	Sh	2¾	**Slightly Dolomitic Lime Mudstone**, same as 75053, medium- to dark-brown-grey fresh, rubbly, thinly-bedded, bedding 344°/24° E	77.46	17.28	2.88	0.804	0.395	210	94	159
75053	Sh	3	**Lime Mudstone**, light-brown-grey weathered, medium- to dark-grey fresh, micritic to cryptocrystalline, some vugs, rubbly (dark brown), semi-resistant, very good reaction with HCl	96.95	1.34	0.98	0.146	0.198	291	79	156

APPENDIX 3: ANALYTICAL LABORATORY INFORMATION AND TECHNIQUES

Name and Address of the Lab:

Graymont Western US Inc., Central Laboratory.
670 East 3900 South, Suite 200
Salt Lake City, Utah, 84107

Statement of Qualifications:

Jared Leikam obtained a B.S. in Chemistry from the University of Utah in the class of 2003. Jared started working for Graymont in February of 2004 and has been working with the ICP Spectrometer for two and a half years, under the direct supervision of Carl Paystrup (Lab Supervisor).

Vonda Stuart obtained a B.S. in Chemistry from Weber State University in 2004. Vonda started with Graymont in August of 2007 and started working in the ICP Lab the following September.

Sample Preparation, Procedures, Reagents, Equipment, etc.:

For the ICP sample preparation, 0.5 grams of the sample is mixed with 3 g of lithium carbonate. The sample and the lithium carbonate are then fused together in a muffle furnace at 850℃. Following the fusion process, th e samples are dissolved in 1:1 HCl; a total of 40 mL 1:1 HCl is used in the dissolving process. The samples are then diluted to 200 mL and spiked with 10 ppm Co. Cobalt is used as an internal standard. At this point the samples are ready for analysis on the Perkin Elmer, Optima 7300V.

Mesh Size Fraction, Split and Weight of Sample:

Upon receiving the samples, the prep room technician riffles and then splits the stone down to a manageable size (roughly 200 g). The stone is then dried in an oven at 120°C. Once the samples have been dried they get pulverized to a -200 mesh size. A split of this pulverized material is then sent for testing in the main part of the lab.

Quality Control Procedures:

The ICP spectrometer is calibrated with two certified reference materials prior to analyzing a batch of samples. A batch typically contains 96 samples. Every 12^{th} sample in a batch is a certified limestone reference sample. In addition to the 8 reference samples imbedded in the batch, there are 2 limestone reference samples analyzed at the beginning and at the end of the batch to ensure the accuracy of our Na and P numbers. Every element being analyzed in a sample is backed up by data from the certified reference materials. We also use an internal standard (10 ppm Co) to further ensure the quality and accuracy of the analysis.

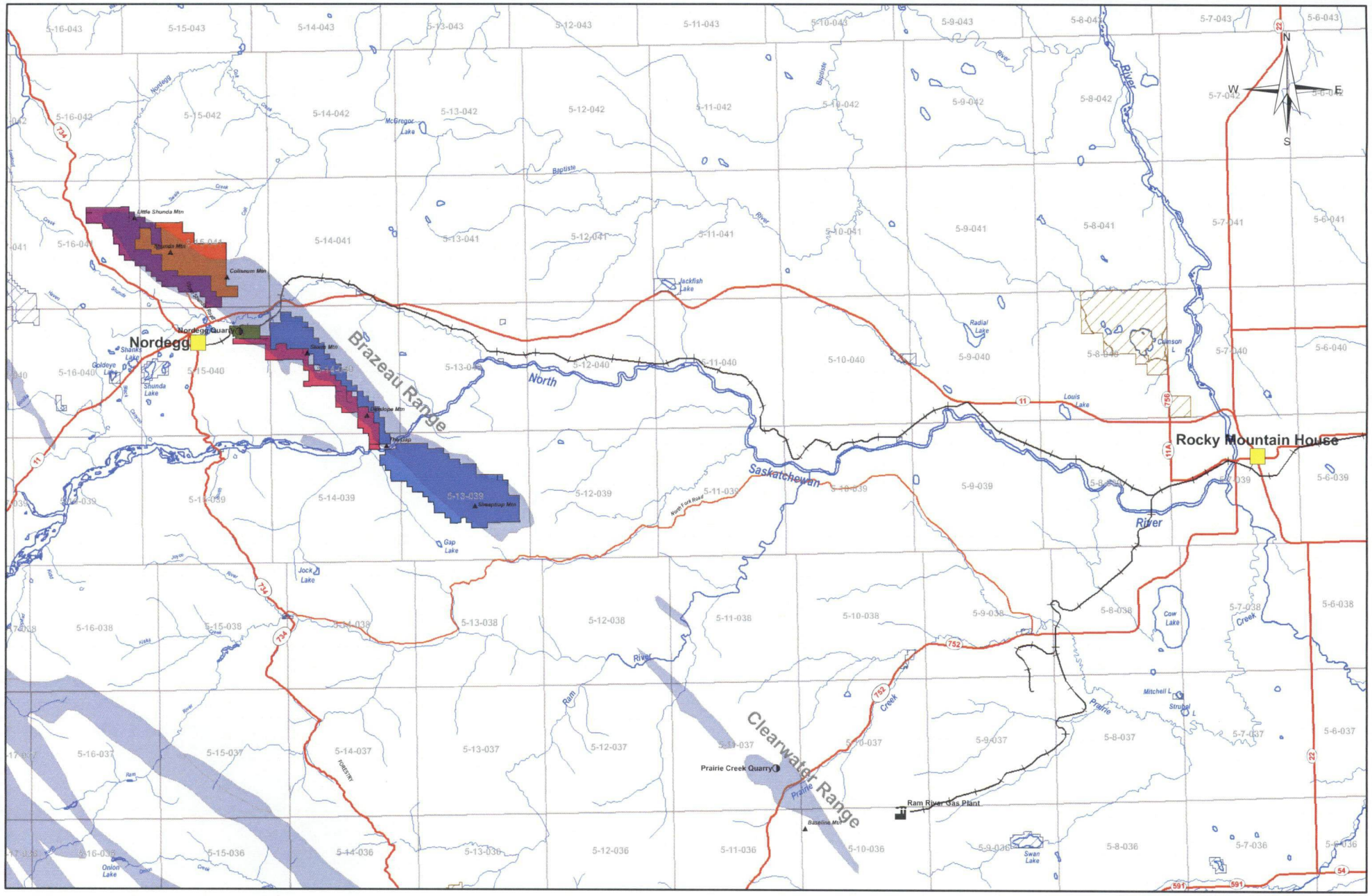
GRAYMONT WESTERN CANADA INC.

Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

BRAZEAU RANGE,
WEST-CENTRAL ALBERTA

Fig. 3.1
Property Location

WM 2010.10



Legend

- Highway
- Secondary Road
- Provincial Recreation Area
- Provincial Park
- National Park
- Approximate Paleozoic Limestone

Graymont Land Holdings

- Brazeau Range (9302090596)
- Shunda Mountain (9308050833)
- Nordegg Quarry Leases
- Nordegg South Lease
- Nordegg North Lease

Kilometres

0 5 10 15 20

1:400,000

Coordinate System: UTM NAD83, Zone 11N

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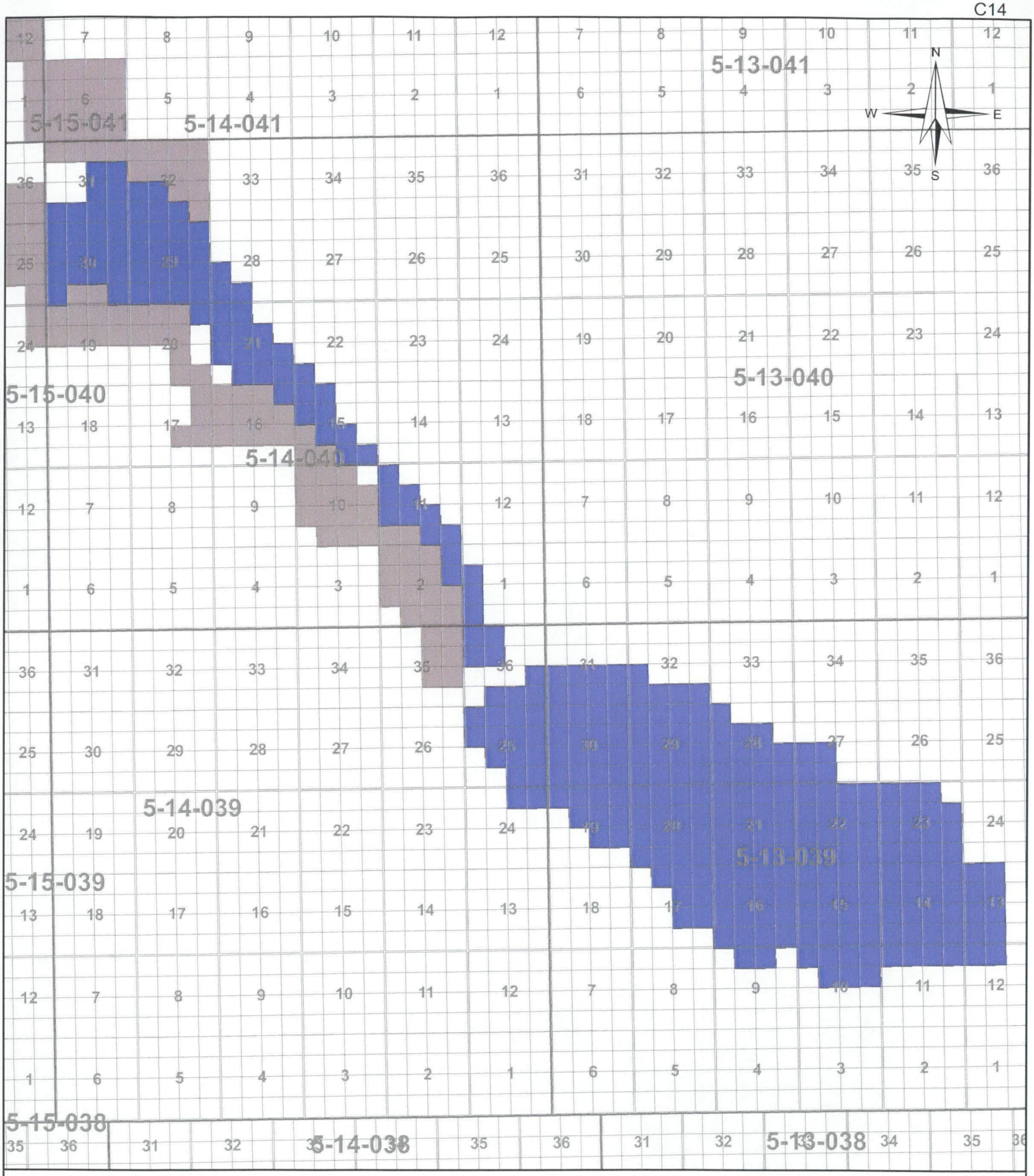
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

BRAZEAU RANGE,
WEST-CENTRAL ALBERTA

Fig. 3.2
Access Map

WM 2010.10

C13



Legend

Graymont Land Holdings

Permit # 9302090596 (5056 Ha)

Kilometres

0 1 2 3 4

1:100,000

Coordinate System: UTM NAD83, Zone 11N

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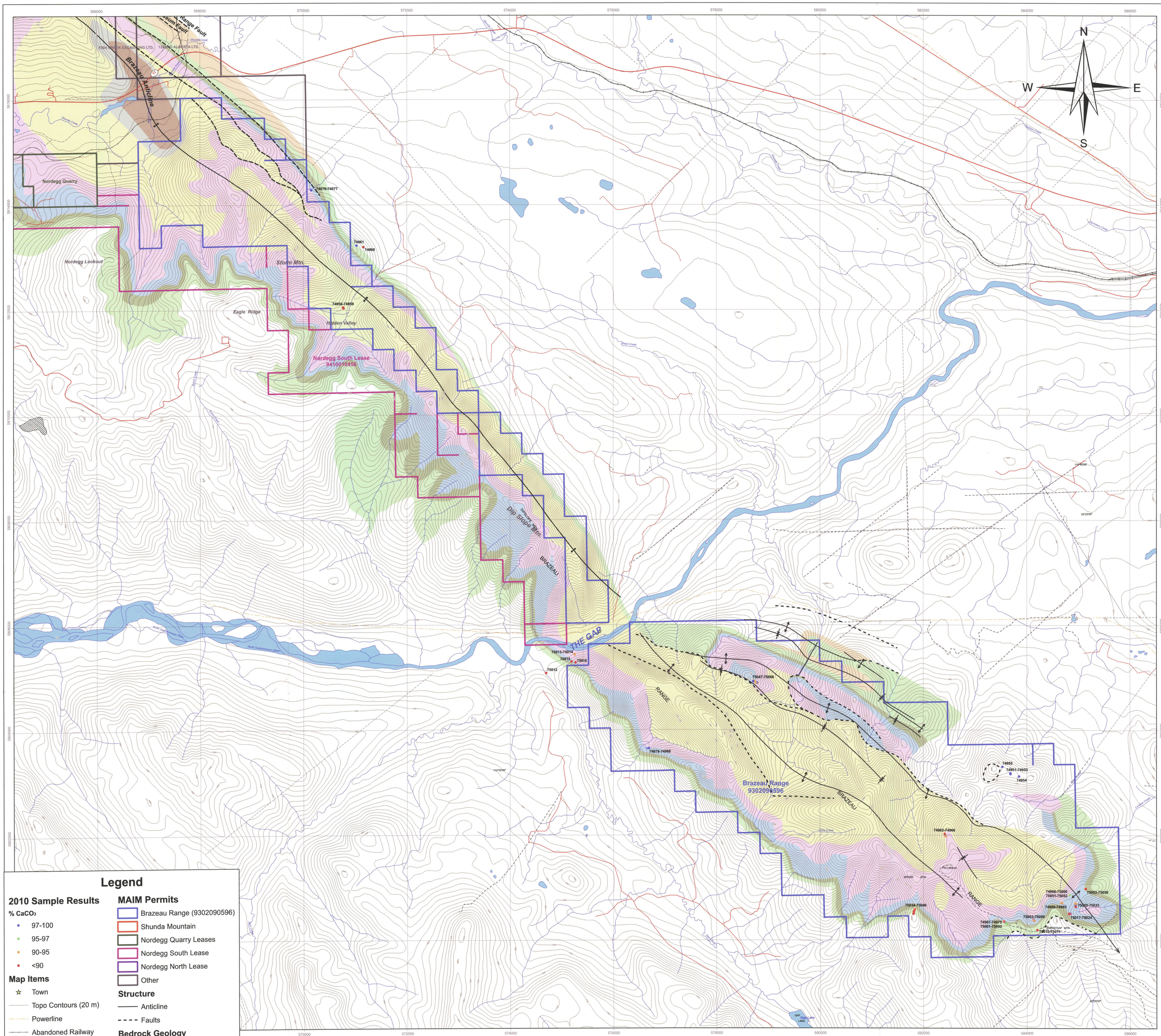
Edmonton, Alberta

BRAZEAU RANGE,
WEST-CENTRAL ALBERTA

Fig. 4.1
Brazeau Range Permit

WM 2010.10



Legend

2010 Sample Results

% $CaCO_3$

- 97-100
- 95-97
- 90-95
- <90

Map Items

- Town
- Topo Contours (20 m)
- Powerline
- Abandoned Railway
- Creek/stream
- River/lake

Roads

- Highway
- Secondary Road
- Minor road/trail
- Trail/seismic line

MAIM Permits

- Brazeau Range (9302090596)
- Shunda Mountain
- Nordegg Quarry Leases
- Nordegg South Lease
- Nordegg North Lease
- Other

Structure

- Anticline
- Faults

Bedrock Geology

Formation

- Alexo
- Banff
- Fernie
- Mt Hawk
- Palliser
- Pekisko
- Shunda
- Turner Valley

Kilometres

0 2 4 6 8

1:25,000

Coordinate System: UTM NAD83, Zone 11N

GRAYMONT WESTERN CANADA INC.

Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

**BRAZEAU RANGE,
WEST-CENTRAL ALBERTA**

Fig. 4.2
Geology and Sample Locations

PK 2010.10